

**REMARKS**

**I. Status of the Claims**

Without prejudice or disclaimer, claim 170 has been cancelled, and claims 108, 109, 204, 213, and 220 have been amended according to the Office's suggestions provided during the interview of October 27, 2010, the substance of which is described below. Support for those amendments can be found in the specification as originally filed, for example, at lines 26-27 on page 12, and in the eight variants described at pages 28-31. Accordingly, no new matter is added herein.

Claims 182, 188-190, and 193-195 were previously withdrawn by the Office. The final Office Action, however, indicates those claims are pending and rejected. See the continuation sheet of the final Office Action Summary and the final Office Action at pages 2 and 5. In the absence of written clarification to the contrary, Applicants will assume that claims 182, 188-190, and 193-195 have been rejoined by the Office.

Claims 108, 109, 111, 112, 115, 121, 124, 130, 133, 136, 139, 140, 159, 163, 164, 166, 168, and 170-220 are pending and subject to examination with entry of this amendment.

**II. Interview Summary**

Applicants thank Examiner Channavajjala for the courtesy extended in the interview with Applicants' representatives on October 27, 2010.

M.P.E.P. 713.04 provides eight items (A-H) that should be addressed in Applicants' submission of the substance of the interview. Applicants' submissions regarding each of those items are as follow:

(A) No exhibit was shown and no demonstration was conducted at the interview.

(B) All of the claims were generally discussed.

(C) The interview included a discussion of the references US 6,153,206 to Anton et al. (Anton), US 2002/0076390 to Kantner (Kantner), and FR 2140977 to Toniou (Toniou)

(D) Examiner Channavajjala suggested claim amendments to clarify that the the intermediate block is different from the first and second blocks and to provide an upper limit on the polydispersity index.

(E) Applicants' representatives discussed with Examiner Channavajjala the non-obviousness of the currently pending claims over Anton in view of Kantner, US 6,531,535 to Melchior (Melchior), and Toniou. Applicants' representatives noted that Kantner cannot be combined with Anton as proposed because the monomers disclosed by Kantner have different Tgs from those required in Anton.

(F) None.

(G) Agreement was reached between Applicant's representatives and the Examiner that Applicants will submit a terminal disclaimer over Application No. 10/670,478 (now US Patent No. 7,803,877) upon indication of allowable subject matter. Agreement was also reached that Applicants will amend the claims as suggested by the Examiner and as discussed above in item (D), and will file a Request for Continued Examination (RCE) to present those amendments.

(H) This interview was in person with Jill K. MacAlpine, with Wen Li's participation via telephone, so this item does not apply.

The Examiner provided Applicants' representatives with an Examiner's Interview Summary on October 27, 2010.

**III. Double Patenting**

Claims 108, 109, 111, 112, 115, 121, 124, 130, 133, 136, 139, 140, 159, 163, 164, 166, 168, and 170-220 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 1, 3, 4, 8, 18, 26, 27, 29, 35, 73, 75, 78, 82, 87, and 89 of copending Application No. 10/670,478 in view of Anton or Toniu. Office Action at 2-5.

For the record, Applicants note that Application No. 10/670,478 has issued as U.S. Patent No. 7,803,877.

Applicants plan to file an appropriate terminal disclaimer when allowable subject matter is indicated.

**IV. Claim Rejections - 35 U.S.C. § 103(a)**

Claims 108, 109, 111, 112, 115, 121, 124, 130, 133, 136, 139, 140, 159, 163, 164, 166, 168, and 170-220 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Anton in view of Kantner, Melchior, and Toniu. Office Action at pages 5-13. Applicants respectfully disagree for the following reasons.

The instant claims, as amended, recite, *inter alia*, at least one film-forming ethylenic linear block polymer having "a polydispersity index ranging from 2.5 to 8" and comprising "a first block and a second block of different glass transition temperatures (T<sub>g</sub>)", which "are linked together via an intermediate segment that is different from the first and second blocks and comprises at least one constituent monomer of the first block and at least one constituent monomer of the second block," wherein "the intermediate

segment is a random copolymer block.” Thus, the claimed at least one film-forming ethylenic linear block polymer comprises at least three blocks, e.g., the at least one film-forming ethylenic linear block polymer is at least a triblock copolymer. The combination of Anton, Kantner, Melchior, and FR 2140977 do not render obvious the currently amended claims. Anton does not teach or suggest a block polymer comprising at least three blocks within the scope of the present claims. Rather, Anton describes a polymer comprising a first repeat unit (first monomer) and a second repeat unit (second monomer). Anton discloses that the polymer may be a block copolymer, without, however, further discussing the nature of the blocks within such a copolymer. Although some of the copolymers listed in the table in col. 4, for example, the copolymers in line 50, IIIIIIIBBBBB, and line 58, IIIIIIIBBBBBBMMMMMM, can be considered as linear block polymers<sup>1</sup>, those linear block polymers differ from the instantly claimed block polymers. For example, one of ordinary skill in the art will readily recognize the copolymer IIIIIIIBBBBB as a diblock, comprising only two different blocks. See *Toni* at page 3. And, even though Anton’s IIIIIIIBBBBBBMMMMMM is a triblock, it is distinguishable from the presently claimed polymers because its intermediate block BBBBBB is a homopolymer, not a random copolymer as presently claimed. Moreover, Anton fails to disclose PDI of any of its polymers.

The Office contends that Anton exemplifies a composition comprising a polymer having a average molecular weight of 27,100, and thus takes the position that Anton teaches the claimed molecular weight range, which will also achieve the claimed PDI. See Office Action at page 15. As discussed in the previous response, PDI reflects the

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<sup>1</sup> For the record, one of ordinary skill in the art will recognize the polymer ABABABAB referred to by the Office at page 8 as a polyblock instead of diblock.

variability of the molecular weight of individual polymer molecules. For a polymer, the more diverse the individual molecular weights are, the higher the PDI is. Thus there is no correlation between PDI and certain average molecular weight. Putting it another way, the disclosure of average molecular weight teaches or suggests nothing regarding the PDI.

Kantner does not rectify Anton's deficiencies. Kantner teaches copolymers, but does not suggest block polymers, let alone the presently claimed block polymers. See paragraphs [0010] and [0015]. Moreover, Kantner suggests that 2-ethylhexyl acrylate, n-butyl acrylate, isooctyl acrylate, and 2-methylbutyl acrylate as the first monomer. See paragraph [0017]. However, each of those monomers has a T<sub>g</sub> below -10 °C (-50 °C, -54 °C, -45 °C, and -32 °C, respectively). Thus, none of them is suitable for Anton's copolymers, which requires that one monomer has a T<sub>g</sub> ranging from -10 to 75 °C and another monomer has a T<sub>g</sub> ranging from 20 to 105 °C. See, *e.g.*, Abstract of Anton. Accordingly, one of ordinary skill in the art at the time of the invention would not have had any reason to substitute Kantner's isobutyl acrylate monomer for Anton's monomer having a low T<sub>g</sub> as proposed by the Office. In contrast, Anton teaches away from such a substitution.

Melchior also fails to rectify Anton's deficiencies. As discussed in the previous response, Melchior teaches that polydispersity values of 2.9-3.5 are acceptable **for its polymers**. However, that teaching is in the context of **its hydroxyl-functional copolymers P**, which are mixtures of copolymers differing from each other by comprising different sets of monomers (see, *e.g.*, lines 15-22, col. 6). The presently claimed polymers are not hydroxyl-functional copolymers.

Moreover, the results of Table 1 and Table 2 of Melchior show that the relationship between polydispersity index and those desired objects cannot be reasonably predicted. For example, the comparative examples 13 and 14 in Table 2, which were prepared by a process not encompassed by Melchior, but which have a polydispersity index (3.2) within the range encompassed by Melchior, display, for example, either significantly lower solvent resistance or unsuitability for storage when compared with Melchior's polymers. Given the fact that the currently claimed block polymers differ from Melchior's copolymer P more than do comparative examples 13 and 14, one of ordinary skill in the art would not have had any reason to make the currently claimed block polymer with a polydispersity index falling within Melchior's range.

Toniu also fails to rectify Anton's deficiencies. For example, Toniui is silent regarding PDI and the nature of the intermediate segment linking two blocks.

Thus, the Office has failed to establish a prima facie case of obviousness over the cited four references because 1) Anton and Toniui fail to teach or suggest the claimed PDI and the claimed random intermediate block, 2) Kantner's teaching is incompatible with Anton since Kantner teaches monomers that are not suitable for Anton's copolymers, and 3) Melchior discloses that the relationship between PDI and desired properties is unpredictable and Melchior's teaching of PDI is within the context of hydroxyl-functional copolymers, which are distinct from the polymers of the present claims.

For the foregoing reasons, Applicants respectfully request that the rejection be withdrawn.

### **Conclusion**

In view of the foregoing amendments and remarks, Applicants respectfully request


reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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